CLAIMS

What is claimed is:

1. A centralizer system for positioning in a marine riser system, said marine riser system connecting between one or more wellbores and a floating platform, a receptacle for receiving said centralizer system, said receptacle having a receptacle inner diameter, said centralizer system being operable for withstanding stresses produced in said marine riser system by relative movement between said wellbore and said floating platform and water motion, said centralizer system comprising:

a metallic pipe comprising a pipe outer diameter less than said receptacle inner diameter so as to be insertable into said receptacle and relatively moveable within said receptacle;

an upset portion formed on said metallic pipe having an upset outer diameter greater than said pipe outer diameter;

a centralizer that is heat shrink mounted to said upset portion on said metallic pipe, said centralizer having an outer diameter less than said receptacle inner diameter for insertion into said receptacle.

2. The centralizer system of claim 1, further comprising an upset transition zone on at least one side of said upset portion, said upset transition zone having an outer diameter equal to said upset portion on one end of said upset transition zone such that said outer diameter of said upset transition zone decreases with distance axially away from upset portion.

3. The centralizer system of claim 2, wherein said centralizer is also heat shrink mounted to at least a portion of said upset transition zone.

4. The centralizer system of claim 1, wherein said centralizer is substantially of solid metal construction and further comprises water flow ports to permit water flow therethrough as said centralizer moves axially with respect to said receptacle .

5. The centralizer system of claim 1, wherein said centralizer is comprised of rigid metal, said centralizer defining and at least one groove shaped to limit substantially radially directed forces created due to impact or high force contact of said receptacle by said centralizer from being through a portion of said rigid metal centralizer through said groove.

6. The centralizer system of claim 5, wherein said at least one groove is selectively positioned within said centralizer to thereby selectively reduce stress at a selected portion of said upset portion.

7. The centralizer system of claim 6, wherein said at least one groove is positioned adjacent to a first end of said upset portion to thereby reduce stress at said first end of said upset portion.

8. The centralizer of claim 7, further comprising two grooves positioned adjacent opposite ends of said upset portion to thereby reduce stress at said opposite ends of said upset portion.

10. The centralizer system of claim 1, further comprising an insulative coating on an outer surface of said centralizer.

11. The centralizer system of claim 1, wherein said centralizer has an outer surface with a curvature portion for contact with said receptacle.

12. The centralizer system of claim 1, wherein said centralizer has a substantially cylindrical outer surface portion for contact with said receptacle.

13. A method for constructing a centralizer system for positioning in a marine riser system, said marine riser system connecting between a wellbore and a floating platform, a receptacle for receiving said centralizer system, said receptacle having a receptacle inner diameter, said centralizer system being operable for withstanding stresses produced in said marine riser system by relative movement between said wellbore and said floating platform and water motion, said method comprising:

forming a metallic pipe with a pipe outer diameter less than said receptacle inner diameter;

forming an upset portion on said metallic pipe having an upset outer diameter greater than said pipe outer diameter; and

forming a centralizer having a centralizer inner diameter the same or slightly less than said upset outer diameter and a centralizer outer diameter less than said receptacle outer diameter;

heating said centralizer relative to said upset portion until said centralizer inner diameter is greater than said upset outer diameter and positioning said centralizer over said upset outer diameter; and

cooling said centralizer relative to said upset portion to thereby affix said centralizer to said upset portion.

14. The method of claim 13, further comprising reducing stress created at a selected position in said upset portion as a result of impact of said centralizer with said receptacle by creating an annular groove within said centralizer shaped to limit substantially radially directed force transmitted through said annular groove, and positioning said annular groove at a position adjacent said selected portion of said upset region.

15. The method of claim 13, further comprising forming an upset transition zone with a transition zone outer diameter wherein said transition zone outer diameter decreases with respect to said upset outer diameter with axial distance away from said upset portion.

16. A centralizer system for controlling stress as a result of contact with a receptacle for

receiving said centralizer system, said receptacle having a receptacle inner diameter, said centralizer system comprising:

a metallic pipe comprising a pipe outer diameter less than said receptacle inner diameter so as to be insertable into said receptacle and relatively moveable within said receptacle;

a rigid centralizer mounted to said metallic pipe, said rigid centralizer having an outer diameter less than said receptacle inner diameter for insertion into said receptacle, said rigid construction centralizer defining therein at least one annular groove shaped to limit substantially radially directed forces from being transmitted through said annular groove in said corresponding portion of said rigid construction centralizer as a result of an impact or hard contact between said receptacle and said rigid centralizer, said at least one groove being selectively positioned within said rigid construction centralizer to thereby reduce an amount of stress created at a selected portion of said metallic pipe due to said impact or hard contact.

17. The centralizer system of claim 16, further comprising an upset region formed on said metallic pipe having an upset outer diameter greater than said pipe outer diameter, said rigid centralizer being mounted to said upset portion, said selected portion of said pipe at which said amount of stress is reduced further comprising a selected portion of said upset region.

18. The centralizer system of claim 17, further comprising an upset transition zone on at least one side of said upset portion, said upset transition zone having an transition zone outer

diameter which decreases with distance axially away from upset region until said transition zone is equal to said pipe outer diameter.

19. A centralizer system for positioning in a marine riser system, said marine riser system connecting between one or more wellbores and a floating platform, said marine riser system defining a receptacle for receiving said centralizer system, said receptacle having a receptacle inner diameter, said centralizer system being operable for withstanding stresses produced in said marine riser system by relative movement between said wellbore and said floating platform and water motion, said centralizer system comprising:

a metallic pipe comprising a pipe outer diameter less than said receptacle inner diameter so as to be insertable into said receptacle and relatively moveable within said receptacle;

an upset portion formed on said metallic pipe having an upset outer diameter greater than said pipe outer diameter;

a centralizer mounted to said upset portion on said metallic pipe, said centralizer having an outer diameter less than said receptacle inner diameter for insertion into said receptacle;

an upset transition zone on at least one side of said upset portion, said upset transition zone having a transition zone outer diameter such that said transition zone outer diameter decreases with distance axially away from upset portion.

20. The centralizer system of claim 19, further comprising a first upset transition zone

on a first side of said upset portion comprising a first upset transition zone outer diameter, and a second upset transition zone on a second side of said upset portion comprising a second upset transition zone outer diameter, said first upset transition zone outer diameter and said second upset transition zone outer diameter each decreasing with distance axially away from upset portion.

21. The centralizer system of claim 20, wherein said first upset transition zone outer diameter and said second upset zone transition zone outer diameter decrease axially with distance at the same rate with respect to axial distance from said upset portion such that said first upset transition zone and said second upset transition zone are substantially mirror images with respect to each other.

22. The centralizer system of claim 20, wherein said first upset transition zone outer diameter and said second upset zone transition zone outer diameter decrease axially with distance by different rates with respect to axial distance such that said first upset transition zone and said second upset transition zone are not substantially mirror images with respect to each other.

23. The centralizer system of claim 19, wherein said transition zone outer diameter decreases with distance axially away from upset portion at a rate directly proportional to said axial distance from said upset portion.

24. The centralizer of claim 23, wherein said transition zone comprises a conical portion.

25. The centralizer system of claim 19, wherein said transition zone outer diameter decreases with distance axially away from upset portion at a variable rate with respect to axial distance from said upset portion.

26. The centralizer system of claim 25, wherein said transition zone outer diameter comprises either a convex or a concave profile portion in an elevational view thereof.

27. The centralizer system of claim 25, wherein said transition zone outer diameter comprises both a convex and a concave profile portion in an elevational view thereof.

28. The centralizer system of claim 25, wherein said transition zone outer diameter comprises both a straight profile portion and a curved profile portion in an elevational view thereof.

29. The centralizer system of claim 19, wherein said wherein said transition zone outer diameter is equal to said upset outer diameter on one end of said transition zone and is equal to said pipe outer diameter on an opposite end of said transition zone.

30. The centralizer system of claim 19, wherein said centralizer is heat shrink mounted to said upset portion on said metallic pipe.

31. The centralizer system of claim 30, further comprising said centralizer being metallic and defining at least one groove selectively positioned within said centralizer to thereby selectively vary stress at a selected portion of said upset portion as a result of contact between said centralizer and said receptacle.

32. The centralizer system of claim 19, further comprising an insulative coating on an outer surface of said centralizer.

33. The centralizer system of claim 19, wherein said centralizer has an outer tapered surface portion for contact with said receptacle.

34. The centralizer system of claim 19, wherein said centralizer has a substantially cylindrical outer surface portion for contact with said receptacle.